

a high-emissivity layer formed by a material having a high emissivity [is] provided on at least one of said internal surface of said sensor element and the surface of said heater;

wherein said high-emissivity layer provided on said internal surface of said sensor element has an emissivity of 0.3 or more, and said high-emissivity layer provided on said surface of said heater is 0.6 or more;

wherein a clearance is formed between the <sup>heater</sup> ~~high-emissivity layer~~ and the internal electrode, the clearance being 0.1 mm or more; <sup>and</sup>

a porosity of the high-emissivity layer being set to a predetermined value to keep a diffusion of air into the internal electrode; <sup>and</sup>

~~said heater being made of non-oxide type ceramic.~~

6. (Amended) An oxygen concentration detector comprising:  
a sensor element including a solid electrolyte and an external electrode[s] provided on an external surface thereof;

a heater provided adjacent to an internal surface of said sensor element; and

an electrode containing a material having a high emissivity is provided on said internal surface of said sensor element;

wherein said electrode provided on said internal surface of said sensor element has an emissivity of 0.3 or more;

A2 D  
D wherein a clearance is formed between the ~~high-emissivity layer~~ <sup>heater</sup> and the internal electrode, the clearance being 0.1 mm or more;

D a porosity of the high-emissivity ~~layer~~ <sup>material</sup> being set to a predetermined value to keep a diffusion of air into the internal electrode.

Sub F1  
D 9. (Amended) An oxygen concentration detector comprising:  
a sensor element including a solid electrolyte and external and internal electrodes provided on external and internal surfaces thereof, respectively;

D A3 a heater provided adjacent to said internal surface of said sensor element ~~the heater being made of non-oxide type ceramic;~~

wherein said heater consists of one or more materials selected from a group consisting of silicon nitride, aluminum nitride[, ] and silicon carbide [nitride].

D A4 11. An oxygen concentration detector according to claim 9, wherein said material ~~having~~ [high emissivity] has an emissivity of 0.6 or more.

Sub E1  
12. (Amended) An oxygen concentration detector comprising:  
a sensor element including a solid electrolyte and external  
and internal electrodes provided on external and internal  
surfaces thereof, respectively;

a heater provided adjacent to said internal surface of said  
sensor element;

wherein said internal electrode consists of a material  
having a high emissivity, and said external electrode consists of  
a material having an emissivity lower than the emissivity of said  
internal electrode; and

wherein a clearance is formed between the <sup>heater</sup> ~~high-emissivity~~  
~~layer~~ and the internal electrode, the clearance being 0.1 mm or  
more.

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13. An oxygen concentration detector according to claim 12,  
wherein said internal electrode consists of platinum black or  
[and] ruthenium oxide.

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14. An oxygen concentration detector according to claim 12,  
wherein a [said] surface of said internal electrode facing [to]  
said external electrode consists of a material having an  
emissivity higher than the emissivity of said external electrode.

Sub E2  
16. (Amended) An oxygen concentration detector comprising:  
a sensor element including a solid electrolyte and external  
and internal electrodes provided on external and internal  
surfaces thereof, respectively;

a heater provided adjacent to an internal surface of said  
sensor element;

wherein at least <sup>a surface</sup> ~~said surface~~ of said internal electrode  
consists of a material having a high emissivity, and a layer  
consisting of a material having an emissivity lower than the  
emissivity of said internal electrode is provided as an outermost  
layer of said sensor element; and

wherein <sup>heater</sup> ~~a clearance is formed between the high-emissivity~~  
~~layer and the internal electrode, the clearance being 0.1 mm or~~  
more.

Kindly add the following new claims:

Sub F3  
--18. An oxygen concentration detector according to claim  
1, wherein the thickness of the high-emissivity layer is in the  
range of 5-20  $\mu\text{m}$ .

A?  
19. An oxygen concentration detector according to claim 1,  
wherein the porosity of the high-emissivity layer is 10% or  
more.--